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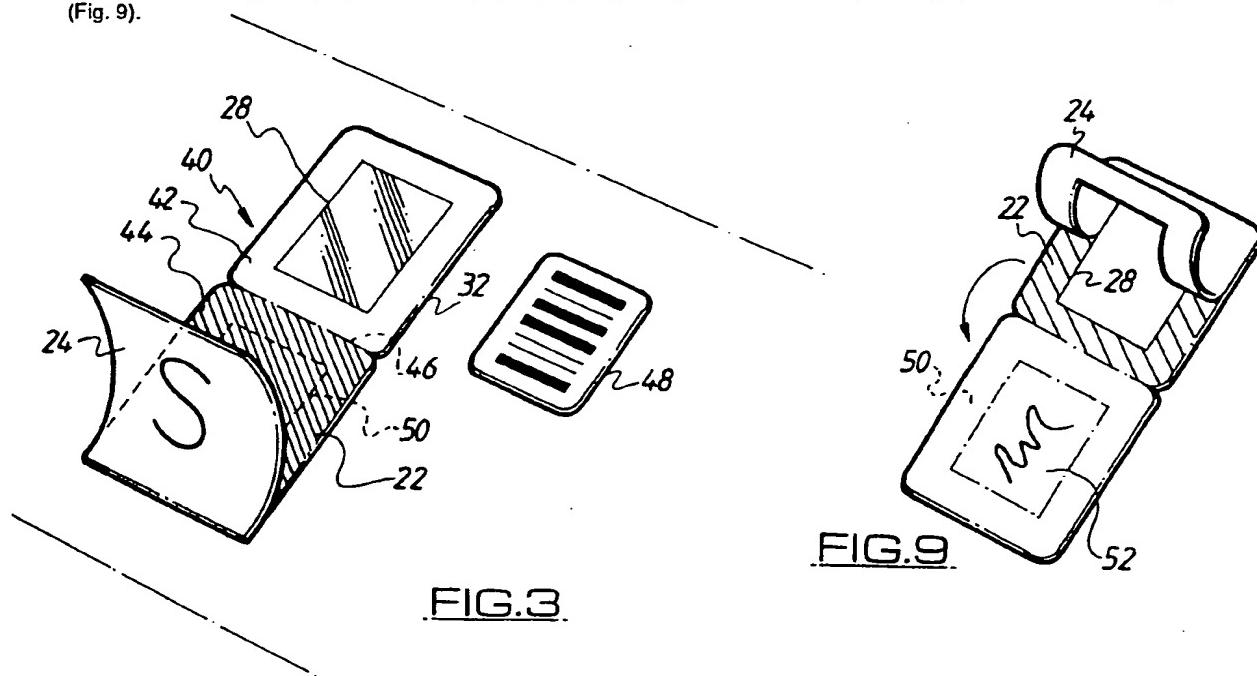
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(54) Security cards

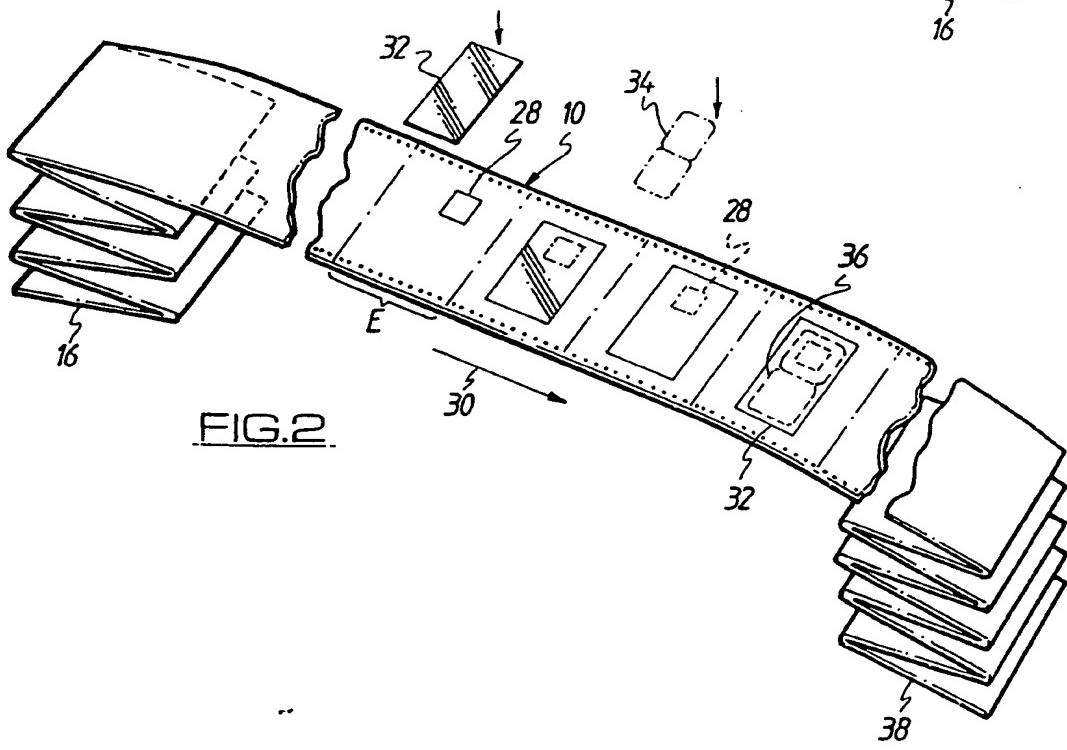
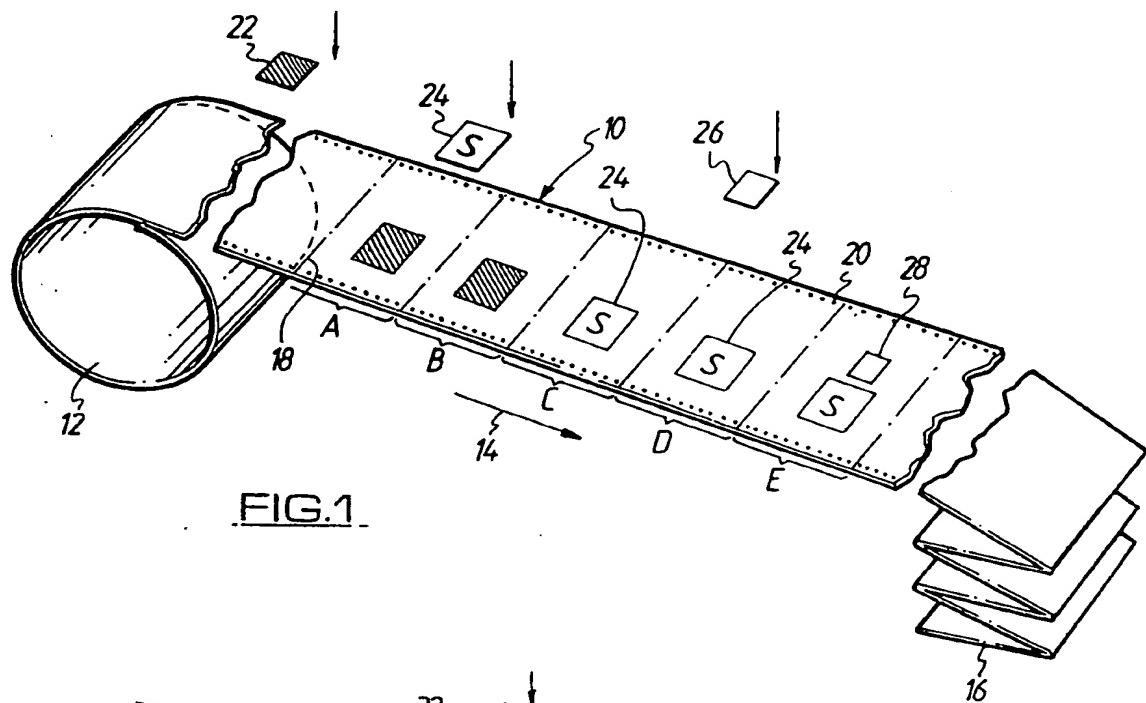
(57) Security cards are produced in continuous stationery form and each card comprises two halves (42, 44) defined in the same web. One of the halves has a viewing aperture (28) and the outer side of the half has a protective covering film (32). There is adhesive (22) covered by release paper (24) on the inner face of one of the halves. The card is sealed by removing the release paper (24) to expose the adhesive (22) and the halves are folded face to face to seal same together. Active identity data (48) is placed at (50) between the halves before they are sealed together.

The adhesive patch (22) and release paper (24) may be applied so that the aperture (28) extends therethrough (Fig. 9).



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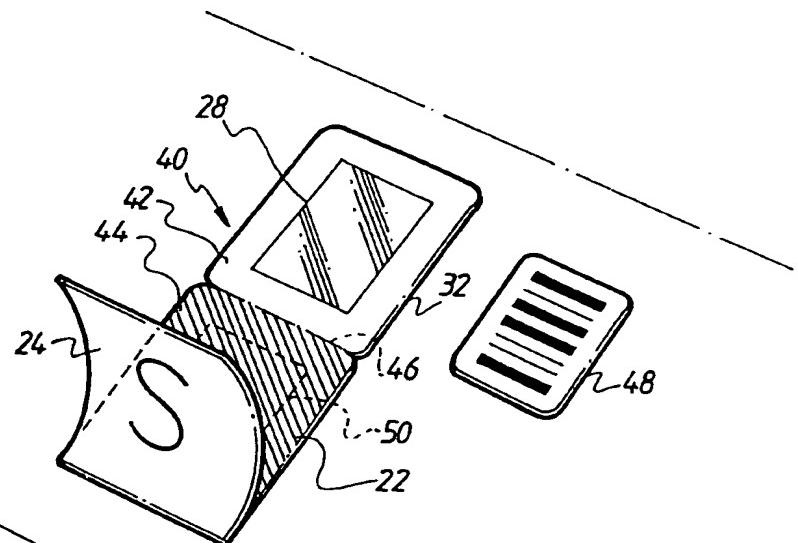


FIG.3.

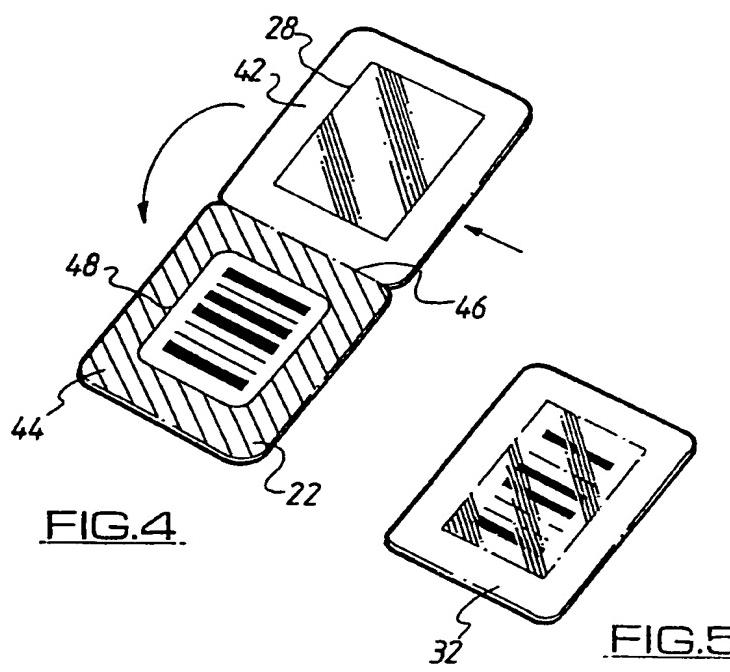


FIG.4.

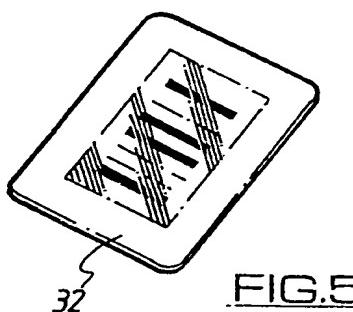
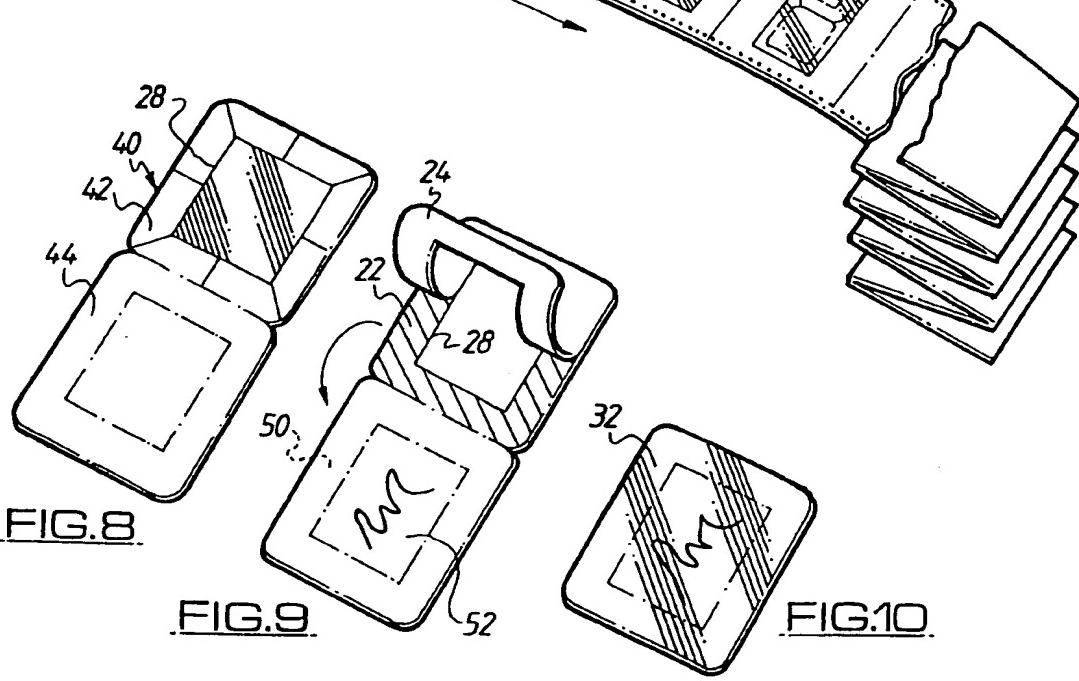
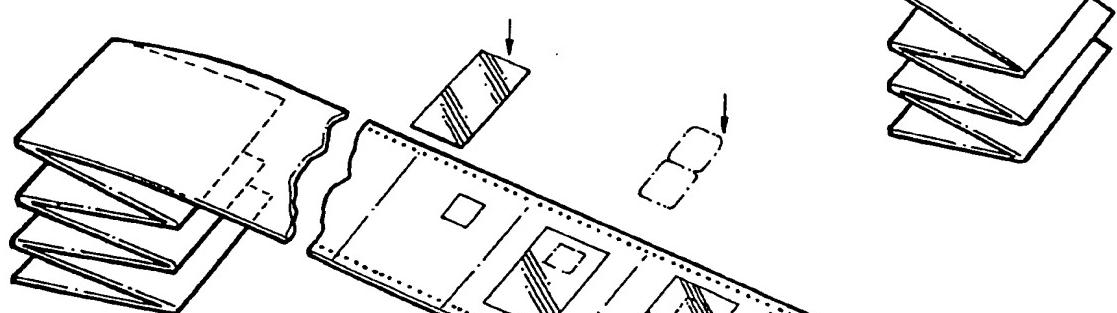
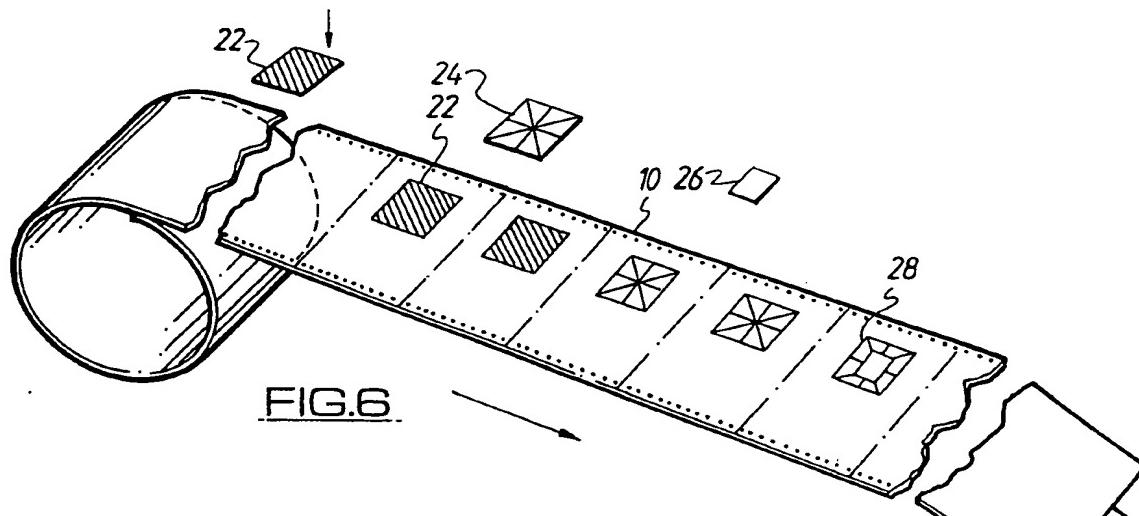


FIG.5.

3-3



Improvements Relating to Security Cards

This invention relates to security cards, which expression is intended to mean any or various kind of personal cards carrying identifying information specifically related to the card or bearer of the card. The identifying information, referred to hereinafter as the "active data" may take any form such as a number, bar code, photograph, signature or the like.

The card may also carry other information, referred to herein as "static data" which again may take any form and may comprise a design pattern, instructional information and so on, which probably will be common for example to a large number of similar cards.

Common examples of security cards which are in use are credit cards, cheque guarantee cards, identity cards, membership cards, which are all hereinafter referred to collectively as security cards, but such expression should be construed accordingly.

Whilst security cards tend to have different levels of security, for example a credit card is required to have a high degree of security, and consequently is manufactured in a robust plastics material, some other cards may need only a lower level of security e.g. a photograph or a number, and the cards may be constructed of a less robust material, as they may require to function for a shorter period of time.

Whilst the present invention in its preferred form has particular application to the lower level security cards, it can be applied to all security cards, and at least in the preferred form, the card according to the invention provides security for the active data on the one hand, and/or

protection for the data so that the card will have long life span.

There are of course known security cards for various purposes, and the rigid plastic credit cards have been mentioned above. Another form of security card is in the form of a cardboard or paper sheet to one edge of which is fixed by adhesive a transparent covering sheet, as disclosed in United Kingdom Patent 1569850. To the inner surface of the plastic sheet is a pressure sensitive adhesive, and this is covered by means of a silicone coated release paper. To use the card, the user applies the active information to the inner face of the cardboard or paper sheet, following which the silicone release sheet is removed, following which the plastic covering sheet is applied over the active information and is adhered thereto and to the surrounding area of the cardboard or paper sheet so as to form a transparent seal over the active information, preventing its subsequent removal either accidentally or on purpose, and also protecting that information from abrasion and defacement. The security of this card is as can be appreciated of a lower value insofar as the covering sheet can be delaminated from the paper or card sheet, but such delamination is difficult, and with the passage of time becomes more difficult as the adhesive cures.

The advantage of the security cards as described in the said British Patent 1569850 is that when the cards are produced and are sent to the user, for example a football club or library they will issue the cards as membership cards, it is not necessary after the active information has been added e.g. the particulars of a member, to return the cards to the original manufacturer for adding of a laminating covering.

However, the aforesaid described cards are difficult to

manufacture at high speed and on a bulk basis, and the present invention provides a security card which by its construction enables its manufacture at high speed and in large numbers. The invention also provides a method of manufacturing the cards.

According to the present invention in a first aspect, there is provided a security card comprising first and second elements of a common substrate web wherein in the first element is provided a viewing aperture, the elements are interconnected so as to be folded into face to face relationship so that each element has an inner side and a outer side, the outer side of the first element is provided with a protective layer which covers at least the viewing aperture, the inner surface of the first or second element or of each element is provided with pressure sensitive adhesive covered by means of a removable release web, whereby active information placed upon the inner surface of the second element may be viewed through the viewing aperture after the release web is removed to reveal the adhesive, and the first and second elements are folded into face to face relationship so as to be sealed together by means of the adhesive.

Preferably, the protective layer is a plastics film. The film is transparent when said viewing is by the eye or it may be opaque when viewing is by viewing apparatus.

Preferably, the said plastic film is applied over the entire surface area of each of the first and second elements on their outer surfaces so that, in the resulting security card, both faces are protected by the plastic film.

The first and second elements preferably are of rectangular configuration of identical outer dimension, and are directly hinged together by means of a fold line defined in the common

substrate web.

The common substrate web may be a single ply of board or paper material, or it may be a laminate, it could be of or it could include plastics material, but in a preferred case it is a layer of paper of appropriate stiffness.

In a first embodiment, all of the inner surface of the second element is covered with pressure sensitive adhesive, and a release web covers such adhesive until the card is ready to be used. When the release web is removed, a label or the like carrying the active information may be placed centrally on the inner side of the second element (and the second element may be marked to facilitate this placement) so that when the two elements are folded together and sealed, the said applied label will be in register with the viewing aperture. The applied label may be a bar code or perhaps a photograph. In either event, if the applied label is of a similar thickness to the substrate layer, then the label will "fill" the aperture in the first section giving the completed card even thickness throughout.

In this embodiment, the adhesive surrounding the applied label will adhere to the frame forming the first element, which surrounds the viewing window.

In a second embodiment, the adhesive is applied to the inside of the first element, and the release web covers same, said release web also having an aperture which registers with and is the same size as the viewing aperture.

By constructing the security card in accordance with the invention, it will be understood that the cards can be produced within or as continuous stationery forms, and therefore high speed production is possible.

In accordance with our further aspect of the invention there is provided a method of producing the security cards as aforesaid, wherein the cards are produced as continuous stationery on a substrate web in accordance with the following sequence;—

- a) the adhesive is patched onto the substrate web at intervals;
- b) the release web is patched to cover the adhesive patching;
- c) the window apertures are cut in the web;
- d) the plastic film is applied at least to cover the apertures;
- e) the web is die cut to define the first and second card sections and preferably the hinge therebetween so that the individual cards can removed from the web.

Embodiments of present invention will now be described, by way of example, with reference to the accompanying diagrammatic drawings, wherein;—

Fig 1 shows the feeding and folding of a continuous stationery web on which the security cards according to a first embodiment of the invention are formed;

Fig 2 shows the feeding of the web of Fig 1 during a second stage of formation of the cards;

Fig 3 shows a single card produced in accordance with the method of Figs 1 and 2;

Figs 4 and 5 show the card of Fig 3 in two stages

illustrating its use;

Figs 6 to 10 show similarly to Figs 1 to 5 the production and use of cards according to a second embodiment of the invention.

Referring to the drawings, and firstly to Figs 1 and 2, a conventional continuous stationary web of paper or the like and indicated by reference 10 is unwound from a reel 12, and is fed as indicated by arrow 14 through various processing stations, and eventually is concertina folded as shown at 16. The web is unrolled fed and folded through known machinery which is not specifically illustrated herein.

Shown in Fig 1 are transverse perforations 18 which divide the web into individual stationery items A B C D E and so on, each of which is processed in order to produce a security card according to this embodiment of the invention. The web is provided with side sprocket holes 20 as is conventional, to assist in the feeding of the web through the machine.

Fig 1 illustrates various process steps which are applied to one side, the first side of the web 10, in the production of the security cards.

At a first stage patches 22 of self-adhesive material are applied to the web sections A B C D and so on. At the next stage, patches of silicone release paper 24 are applied over the adhesive as shown, and finally a cutting die 26 cuts a viewing aperture 28 in the position shown on each of the web sections A, B, C, D. The resulting web is folded into concertina fashion as shown in 16.

In the second stage of the process, the web in concertina form 16 is unfolded and fed as indicated by arrow 30 so that

the web travels with the other side of the second side face upwards, and two further processing steps are carried out. Firstly, patches of transparent plastics film 32 are applied by bonding or adhesive or other means so as to cover the viewing apertures 28 as shown, and in fact so as to extend over an area which embraces the adhesive and release paper patches 22, 24.

Finally a skip cutting die 34 of the configuration shown forms skip cuts 36 through the various laminated layers, the cut line 36 lying within the perimeter of the plastic film patch 32. The completed cards are finally concertina folded as shown at 38, and are ready for use.

It should be mentioned that the web 10, the patches 24 and the film 32 may be printed or marked with appropriate static information as required, and it should also be mentioned that the cards thus formed can be formed in continuous stationery of which the sections are designed for additional uses. For example the cards may be formed in connection with mailer or cheque forms or any other conventional continuous stationery items.

The cards for use are removed from the web 10 by hand or machine, and an individual card 40 is shown in Fig 3. The card is removed by breaking the residual catch points on skip cut line 36, and it will be seen from Fig 3 that each card comprises two elements namely a first element 42, and a second element 44 which are formed from the same basic substrate constituting the web 10, and these two elements are separated by hinge line 46 which is formed by the skip cutting die 34. The elements 40 and 44 are of identical size, and the window 28 is formed centrally of the first element 40, and the adhesive 22 covers all of one face, which is the inner face of element 44. That portion of the

silicone release material 24 which is removed with the card covers the adhesive 44. It will be appreciated that in Fig 3 the card faces with the first side upwards i.e. the Fig 1 position, and that to the rear of the card the film 32 covers each of elements 42 and 44.

To use the card the steps illustrated in Figs 3 to 5 are carried out.

When a user receives a folded batch of web 38, and removes the cards from the concertina web, the cards are distributed to individuals, for example. To provide the active information thereon, in the arrangement of Fig 3, the release paper 24 is removed, and then a label 48 having in this case bar codes thereon is applied centrally to the adhesive face 22 of the element 44. Element 44 may contain printing guide lines 50 to enable the accurate placement of the label 48. Label 48 conveniently is the same size as window 28.

Fig 4 shows the arrangement wherein the label 48 has been applied, and the security card is ready to be closed. Closing takes place simply by a folding over of the element 42 onto element 44 about the hinge line 46, which causes the window 28 to come into exact register with the label 48, so that the bar code is durable, and scanable by a bar code leader through the outer protective film covering 32, which exists at both sides of the card. The finished card as shown in Fig 5 is a seal protected item of high utility. In the case of bar code reading for example, scanning can take place indefinitely and the bar coding will not be impaired by the friction of the scanner moving over the surface of the card as it is protected by the plastic film.

Fig 6 to 10 show in similar arrangement to Figs 1 to 5 how a second embodiment of the invention may be created. Reference

numerals already used in Figs 1 to 5, which denote the same parts in Figs 6 to 10, are used in these latter figures.

The main difference between the arrangement of Figs 6 to 10 and that in Figs 1 to 5 is that in the Figs 6 to 10 embodiment the adhesive patch 22 and the covering silicone patch 24 are applied in registry with the location where the aperture 28 is made, so that the aperture exists not only in the web 10 but also through the release patch 24 and the adhesive patch 22.

As shown in Figs 8, 9 and 10 therefore the adhesive and silicone release paper 22, 24 are on the inner side of the first element 42, and surround the aperture 28 so that when the release material is removed as shown in Fig 9, an annular band of such material comes away.

The element 44 has an inner surface therefore of plain paper of the web 10, and it may be provided with a border marking 50 as in the previous embodiment in which the active information, in this case a signature 52 can be inserted.

After removal of the release paper 44, the two elements 42 and 44 are simply folded together to complete the card as shown in Fig 10. The card of Figs 8, 9 and 10 may be used for example for identity cards, and section 50 may be adapted to accommodate a photograph and a signature, or some other personal identification means. The identification means may in fact be invisible to the naked eye, and when the identification means or the active data is of this nature, for example where it is required to be read magnetically, the protective film 32 need not be visually transparent, but must be transparent to the reading apparatus.

It will be understood therefore that the invention provides

an extremely effective card in the embodiments described, and
in their method of production.

CLAIMS

1. A security card comprising first and second elements of a common substrate web wherein in the first element is provided a viewing aperture, the elements are interconnected so as to be folded into face to face relationship so that each element has an inner side and a outer side, the outer side of the first element is provided with a protective layer which covers at least the viewing aperture, the inner surface of the first or second element or of each element is provided with pressure sensitive adhesive covered by means of a removable release web, whereby active information placed upon the inner surface of the second element may be viewed through the viewing aperture after the release web is removed to reveal the adhesive, and the first and second elements are folded into face to face relationship so as to be sealed together by means of the adhesive.
2. A card according to Claim 1, wherein the protective layer is a transparent plastics film.
3. A card according to Claim 2, wherein the said plastic film is applied over the entire surface area of each of the first and second elements on their outer surfaces so that, in the resulting security card, both faces are protected by the plastic film.
4. A card according to Claim 2 or 3, wherein the first and second elements are of rectangular configuration of identical outer dimension, and are directly hinged together by means of a fold line defined in the common substrate web.
5. A card according to any preceding claim wherein the common substrate web is a single ply of board or paper material.

6. A card according to any preceding claim, wherein all of the inner surface of the second element is covered with pressure sensitive adhesive, and a release web covers such adhesive until the card is ready to be used.
7. A card according to any one of Claims 1 to 5, wherein the adhesive is applied to the inside of the first element, and the release web covers same, said release web also having an aperture which registers with and is the same size as the viewing aperture.
8. A security card substantially as hereinbefore described with reference to the accompanying drawings.
9. A method of producing security cards according to any one of the preceding claims, wherein the cards are produced as continuous stationery on a substrate web in accordance with the following sequence;:-
 - a) the adhesive is patched onto the substrate web at intervals;
 - b) the release web is patched to cover the adhesive patching;
 - c) the window apertures are cut in the web;
 - d) the plastic film is applied at least to cover the apertures;
 - e) the web is die cut to define the first and second card sections and preferably the hinge therebetween so that the individual cards can removed from the web.
10. A method of producing security cards according to any one of Claims 1 to 8, substantially as hereinbefore described

with reference to the accompanying drawings.

Patents Act 1977

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**Eaminer's report to the Comptroller under
Section 17 (The Search Report)**Application number
9205549.0**Relevant Technical fields**

- (i) UK CI (Edition K) B6A (AK)
 (ii) Int CL (Edition 5) B42D

Search Examiner
G J W RUSSELL

Databases (see over)

- (i) UK Patent Office
 (ii)

Date of Search
12 JUNE 1992

Documents considered relevant following a search in respect of claims**1-10**

Category (see over)	Identity of document and relevant passages	Relevant to claim(s)
X	GB 2235412 A (FORM DESIGN) - see page 4 lines 20-24 and 35	1, 2, 4-6, 9
A	GB 2071570 A (VICKERS) - see page 2 lines 4-31	1

Category	Identity of document and relevant passages	Relevant to claim(s)

Categories of documents

X: Document indicating lack of novelty or of inventive step.

Y: Document indicating lack of inventive step if combined with one or more other documents of the same category.

A: Document indicating technological background and/or state of the art.

P: Document published on or after the declared priority date but before the filing date of the present application.

E: Patent document published on or after, but with priority date earlier than, the filing date of the present application.

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